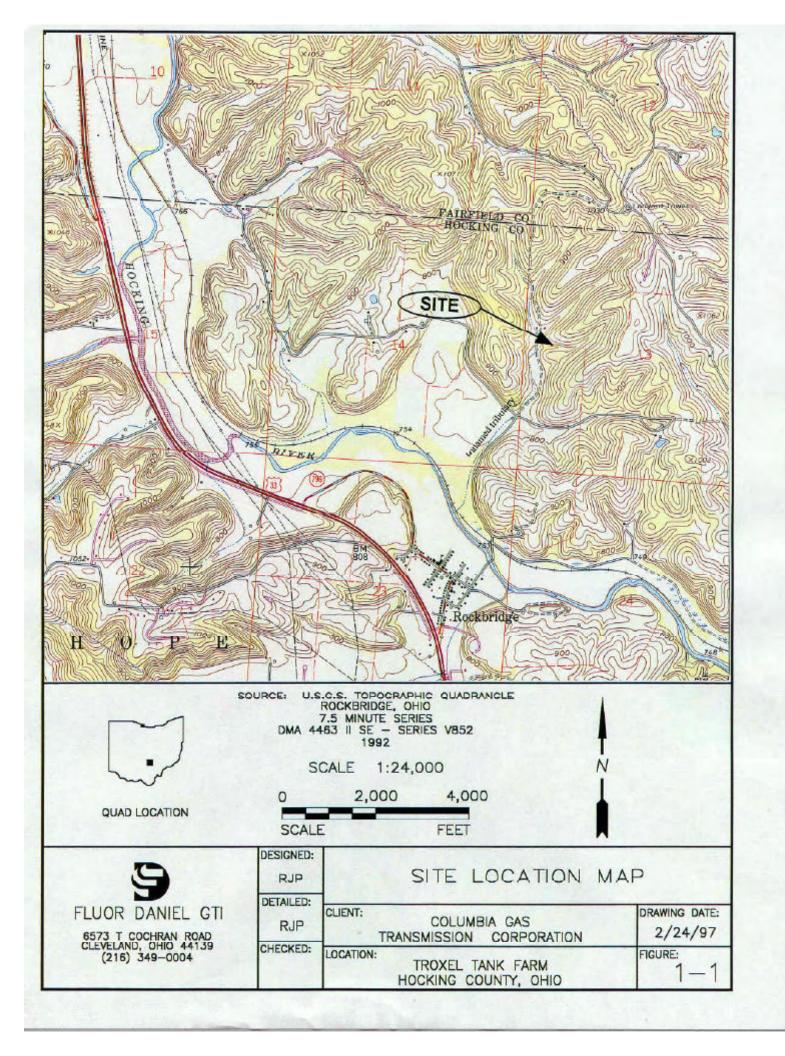
# TROXEL TANK FARM CHARACTERIZATION REPORT

**Hocking County, Ohio** 

**16 February 1999** 

Prepared for Columbia Gas Transmission Corporation

> By: Fluor Daniel GTI, Inc. Environmental Standards, Inc.



### 2.0 ENVIRONMENTAL SETTING

### 2.1 Physical Setting

The Troxel Tank Farm property consists of approximately 100 acres. The operating portion of the facility (tank farm and loading/unloading area) occupied 0.25 acres. The site is located in a valley, with steep slopes to the west and east. A review of the Rockbridge, Ohio, 7.5 Minute Series, USGS Quadrangle Map indicates base levels of main drainage are approximately 750 feet above mean sea level (AMSL). Ridge top elevations in the area ranges from 900 feet AMSL to 1,100 feet AMSL. The site is approximately 780 feet AMSL, and is located in a valley that trends north.

### 2.2 Climate

Hocking County is characterized as a humid, continental climate with warm summers and cold winters. The monthly average (1951-1980) temperature ranges from 24°F in January to 71°F in July (Soil Survey Hocking County, Ohio, 1989).

The 1951-1980 annual normal precipitation for Hocking County is 38.5 inches. Precipitation is evenly distributed throughout the year with June (4.3 inches) being the wettest and February (2.2 inches) being the driest (Soil Survey Hocking County, Ohio, 1989).

### 2.3 Surface Water Hydrology

The Troxel Tank Farm is located within a stream valley. The area is fairly level with a downward slope to the west. A drainage ditch exists along the northern side of the gravel lane adjacent to the site. This drainage ditch does not receive any surface water run-off from the site; it receives surface water run-off from areas upgradient of the site. Surface run-off from the Troxel Tank Farm flows southward to a dry run which flows west to an unnamed stream. The dry run is located along the southern side of the site and is approximately four feet wide and three feet deep. Surface flow in the dry run is intermittent, with seasonal flow only occurring during periods of high precipitation. The unnamed tributary is also characterized as intermittent. This unnamed stream flows south-southwest to the Hocking River. The confluence of the unnamed tributary and Hocking River is approximately 3500 feet southwest of the site. The Hocking River is a major water way in the area. The general surface water flow direction of the Hocking River is to the southeast.

### 2.4 Geology and Soils

Geologically, the site is located within the Appalachian Plateau Physiographic Province of Ohio. The area is comprised on relatively horizontal sedimentary strata with subtle folds. Topography throughout the region is the result of fluvial (river and stream) processes that

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have formed moderately steep slopes and relatively long, narrow valleys typical of highly dissected plateau regions.

The geology of the region is presented in Figure 2-1 (Site Geology Map). The area in which the Troxel Tank Farm is located consists of soils underlain by bedrock of the Waverly and Maxwell Groups, which consists of Mississippian age shales, sandstones and limestone, (Geologic Map of Ohio, 1992).

The soil type in the vicinity of the Troxel Tank Farm is in the Shelocta-Cruze-Wellston Association. This association is characterized as deep, gently sloping to very steep, well drained and moderately well drained soils formed in residuum and colluvium, derived from siltstone, shale, and sandstone, and in loess; on uplands. These soils are typically present on ridgetops and dissected hillsides. The ridgetops are narrow and have many high points and low saddles. The hill sides are commonly benched. Valleys are generally narrow. Slopes range from 2 to 70 percent. This association makes up about 35 percent of the county. (Soil Survey of Hocking County, Ohio, 1989).

### 2.5 Hydrogeology and Groundwater Quality

Groundwater in the area occurs in the natural porosity of both alluvial (unconsolidated) and bedrock (consolidated) formations. Dug wells in the alluvium located along the lower elevations are common and generally yield water in sufficient quantities for domestic use. Wells drilled into bedrock aquifers produce sufficient volumes of water for domestic purposes. A search of water well logs on file with the Ohio Department of Natural Resources indicated that the nearest groundwater well is located approximately 2,000 feet to the northwest. According to the well log, unconsolidated material (clay, sand, and gravel) was encountered to a depth of 81 feet bgs. Shale underlies the unconsolidated sediments to a depth of 230 feet. A ten-foot sand lense underlies the shale. The well was screened from 81 to 240' bgs. The log indicated the well produces 30 gallons of water per minute. The static water level was zero indicating the aquifer is under confined conditions.

An approximate groundwater flow direction is depicted on Figure 1-2 based on surface topography. The depicted groundwater flow direction is not based on the collection of field data, and thus may not represent actual conditions.

### 2.6 Ecological Zones

The operating portion of the site, while in operation, is estimated to be approximately 0.25 acres; based on this small area, the potential for an ecological zone that meets the definition stated in the CWP (Section 3.5, Ecological Zone Identification) is remote. Nevertheless, a level one ecological assessment (literature review) was performed at the site. The Rockbridge, Ohio quadrangle of the National Wetland Inventory map (USFWS, 1990) indicates many wetland areas to the west of the Troxel Tank Farm, most of which are either in the floodplain of the Hocking River, or are disconnected remnants of the river. The wetlands which could possibly intercept surface run-off from the area of the Troxel Tank Farm are as follows:

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# SALT CREEK

SOURCE: GEOLOGIC MAP OF OHIO: STATE OF OHIO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF GEOLOGICAL SURVEY, 1992

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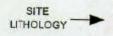


CONEMAUGH GROUP -

Pennsylvanian Age shales, sandstone, coal and limestone.



POTTSVILLE AND ALLEGHENY GROUPS -Pennsylvanian Age coal, sandstone, shales and limestones.





WAVERLY AND MAXVILLE GROUPS -Mississippian Age shales, sandstones and limestone.



OLENTANGY AND OHIO GROUPS -Devonian Age shales.





GEOLOGIC MAP LOCATION

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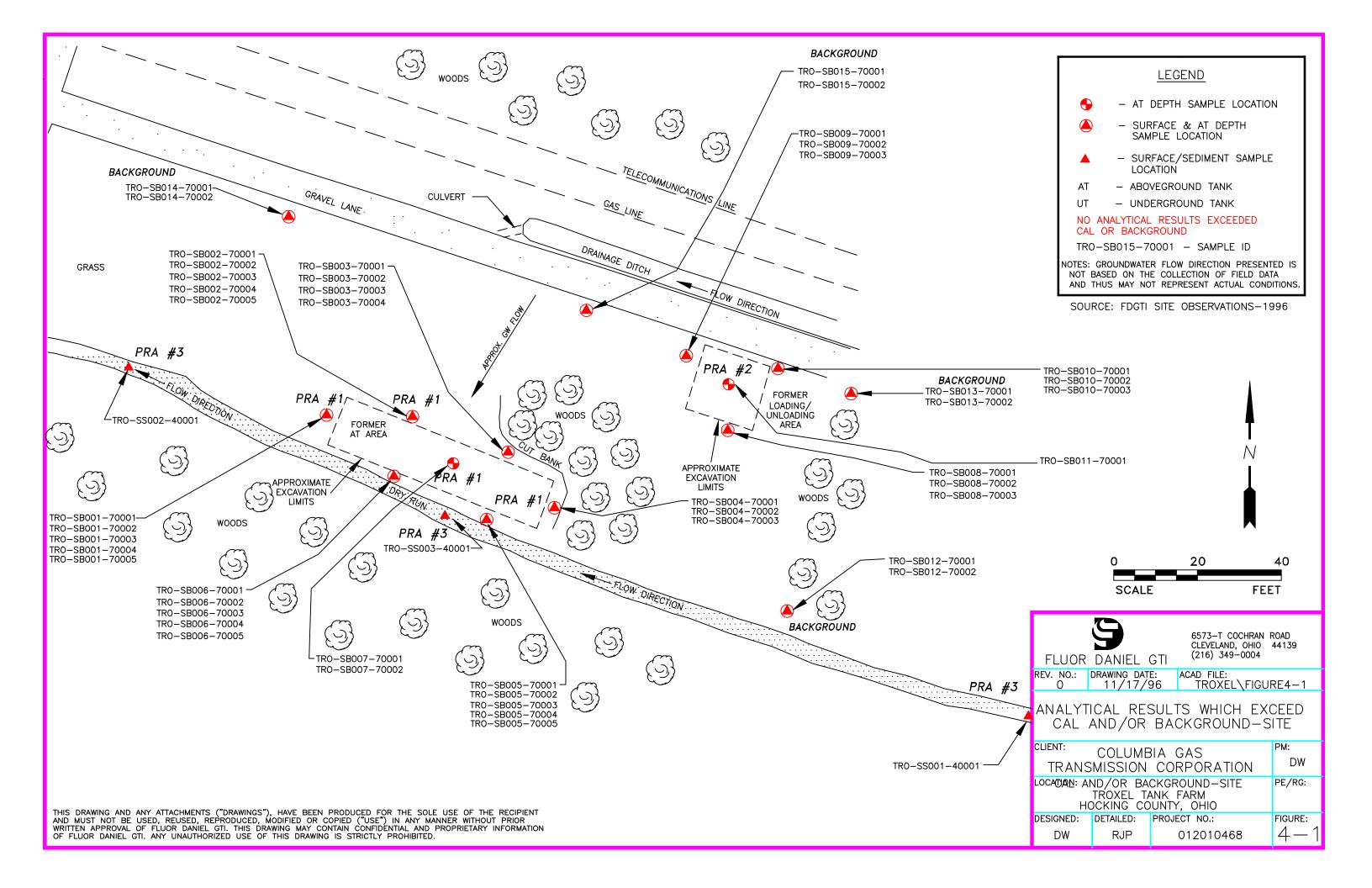
6573-T COCHRAN ROAD CLEYELAND, OHIO 44139 (216) 349-0004

REV. NO.: DRAWING DATE: 4/06/98

ACAD FILE: GEOLOGY

### SITE GEOLOGY MAP

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Project: <u>Troxel</u> Location: <u>Hocking Co., OH</u> PRA/Location: 2/5R0//

Lag Ey: (b) (4)

11/05/97

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Depui		ID	Class.	(Color, Texture, Structure)	
(FT.)	(PPM)	טו	101433.	(Solot, Texture, Structure)	
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Project: <u>Troxel</u>
Location: <u>Hocking Co. Of</u>

PRA/Location: 3 / 5 5 00 / Log By: (b) (4)

11/04/97

Depth (FT.)	PID (PPM!)	Sample ID	USCS Class.	Tenca <10	(Color	Description , Texture, Structur 20%. Some 20% to	re)	to 50%
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Project: <u>Troxel</u> Location: <u>Hocking Co. OH</u> PRA/Location: 3/55002

Log Ey: (b) (4)

11/04/97

Depth	PID	Sample	USCS			IColo	Description r, Texture, Str	icture)	
(FT.)	(PPM)	ID .	Class.	Trace <	10%. Litt!	e 10% to	20%. Some 20	% to 35%. And 35%	to 50%
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Project:	Troxe	<u></u>	
Location:	Hocking	CD.	04

PRA/Location: 3/55003 Log Ey: (b) (4)

	III	OH/	97F	

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	Depth	PID	Sample	uscs	Description		
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Project: <u>Traxel</u> Location: <u>Hocking Co., OH</u> PRA/Location: Background/SB013
Log Ev: (b) (4)

Log By: (b) (4)

Danth	PID	Sample	USCS	Description
Depth	(PPM)	ID	Class.	(Color, Texture, Structure)
(FT.)	(CENI)	''	0.233.	Trace <10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
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-2-	1		1	moderately Brown to Grayish Brown, SILT and Fine
j		ļ		Hoderacey Blown 2001
	1 .	70002	ML	Sand, Mottled, Some Fron Staining, Moist
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Project:	Troxe	1	
ocation:	Hocking	Co.	04

PRA/Location: <u>Rackoround/580/2</u> Log By: (b) (4)

11/04/97 Description USCS Sample Depth PID (Color, Texture, Structure) ID Class. (PPM) (FT.) Trace <10%. Little 10% to 20%. Some 20% to 35%. And 35% to 50% -0-70001 ML Moderately Brown SILT and Fine Sand, Some -2-Gravel and Iron Staining moist 70002 ML -6--8--10---12-

Project: Troxe!	PRA/Location
	Log Ey
ocation: Hocking Co., OH	2 - 7

PRA/Lecation: Background/SB015

Log By: \_(b) (4)

ـ ۱۱۵۱۱	HOCKI	ng Co.			11/04/97		
	nio.	Sample	USCS	Description	-		
Depth	PID	ID	Class.	(Color, Texture, Structure)			
(FT.)	(PPM)	1 '10	Class.	Trace <10%. Little 10% to 20%. Some 20% to 35%. And 3.	5% to 50%		
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		70007	MI	Moderately Brown to Dark Yellowish Drange SILT and	Fre Sand, H.		
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Project:	Troxe	1	
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PRA/Location: <u>Rackaround/sB014</u>

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	OID.	Sample	USCS	Description
Depth	PID			(Color, Texture, Structure)
(FT.)	(PPM)	ID	Class.	
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į			T	Moderately Brown to Yellowish Bown SILT+ Fine Sand, Some Gravel
<b> </b>		70002	ML	Moderately Brown to Yellowish Brown SLU+ Fine Sand, some Gravel
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# **Comprehensive Analytical Results**

		PRA	0				
		PRA Description	WASTE CHARACTERIZATION				
		Sample Type	Normal Sample				
		Sample Id <b>TRO-DS001-20001</b>			TRO-DS002-70001		
		Depth - ft bgs 0 - 0		0 - 0			
		Result Units	UG/L		UG/L		
Category	Analyte	Action Level	Result Flag	Det Lim	Result Flag	Det Lim	
P/PCB	AROCLOR-1016	.5	0.065 U	0.065			
	AROCLOR-1221	.5	0.065 U	0.065			
	AROCLOR-1232	.5	0.065 U	0.065			
	AROCLOR-1242	.5	0.065 U	0.065			
	AROCLOR-1248	.5	0.065 U	0.065			
	AROCLOR-1254	.5	0.065 U	0.065			
	AROCLOR-1260	.5	0.065 U	0.065			
METAL	BARIUM, TOTAL	2000	460	200			
	CADMIUM, TOTAL	5	5.0 U	5.0			
	CHROMIUM, TOTAL	100	210	10.0			
	LEAD, TOTAL	15	83.0	5.0			
	SILVER, TOTAL	100	10.0 U	10.0			
	LEAD, TCLP	400			500 U	500	
	SILVER, TCLP LEACHATE	390			500 U	500	
	BARIUM, TCLP LEACHATE	5500			10000 U	10000	
	CADMIUM, TCLP LEACHATE	39			1000 U	1000	
	CHROMIUM, TCLP LEACHATE	230			500 U	500	
	SELENIUM, TCLP LEACHATE				100 U	100	
	MERCURY, TCLP LEACHATE	23			20.0 UJ	20.0	

Note:

Blank cells in result column indicate an analysis was not performed for that analyte.

# **Comprehensive Analytical Results**

		PRA	0			,
		PRA Description	WASTE CHARACTERIZATION Normal Sample			
		Sample Type				
		Sample Id	-		TRO-DS002-70001	
		Depth - ft bgs			0 - 0	
		Result Units	UG/L		UG/L	
Category	Analyte	Action Level	Result Flag	Det Lim	Result Flag	Det Lim
	ARSENIC, SPLP	.43			500 U	500
	BARIUM, SPLP	5500			10000 U	10000
	CADMIUM, SPLP	39			1000 U	1000
	CHROMIUM, SPLP	230			500 U	500
	LEAD, SPLP	400			500 U	500
	MERCURY, SPLP	23			20.0 UJ	20.0
	SELENIUM, SPLP				100 U	100
	SILVER, SPLP	390			500 U	500
	MERCURY, TOTAL	2	1.0 U	1.0		
	ARSENIC, TOTAL	50	140	10.0		
	ARSENIC, TCLP LEACHATE	.43			500 U	500

Note:

Blank cells in result column indicate an analysis was not performed for that analyte.